DOCUMENT RESUME

ED 161 504 JC 780 585

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TITLE Education and Work in the Future.
PUB DATE 19 Oct 78
NOTE 27p.; Paper presented at the Conference on the Future of Work and the Community College (Texas City, Texas, October 19, 1978)

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS *College Role; Community Colleges; Educational History; Educational Objectives; *Educational Planning; Employment Trends; *Futures (of Society); *Junior Colleges; Manpower Needs; *Social Change; Trend Analysis; Vocational Education

ABSTRACT

Community colleges are at a point in history when they must be adept in coping with change in social institutions, economic pressures, and the body of knowledge. Over the last century, education has become more personalized; behavioral objectives now guide competency-based instruction; computer-assisted instruction has shown success; educational television has made the home a learning center; co-operative education has expanded the link between employers and educational institutions; and new disciplines have emerged as others have been altered. Occupational education has become an alternative option in American education from the standpoint of the person in the labor market, employers, and those seeing the relationship between trained manpower and economic vitality. Community colleges must be responsive to (1) changing trends in values and lifestyles in terms of work and leisure, shifts in declining productivity in industrial and business activity with the resulting need to recycle technical skills and face the problems of inexperienced, poorly educated, young adults; (2) developing a capacity to serve a limitless market of older and non-traditional students; (3) measuring the impact of community-based education through the use of enrollment information and longitudinal studies; and (4) developing new cooperative arrangements for providing community benefits. (MB)

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ED161504

"Education and Work in the Future"

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Presented at the Conference on the Future of Work and the Community College, sponsored by The American Association of Community and Junior Colleges and the College of the Mainland at Texas City, Texas, on October 19, 1978.

JC 780 585

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"Education and Work in the Future"

The Importance of Futurism

Futurism is becoming a necessary tool for educational planners in this era of rapid change in social institutions, economic processes, and the body of knowledge.

Some futurists deal in short-term predictions. Others are long-run prophets. Although not very reliable, it is the long-run that is the safest for the futurist, but it is the short-run that is the most important. As economist John Maynard Keynes noted, the short-run deserves the most attention because in the long-run we are all dead anyway.

How do futurists come up with their conclusions, predictions, and prophecies? Many futurists look for cause-effect type relationships and, when found, these relationships serve as the basis for statements about the future. Some base their predictions on man-generated cyclical patterns. Others apply the principle of geometric progression to knowledge explosion and extend combinations of knowledge intertemporally producing statements of anticipated scientific events with convincing logic. The study of historical trends in search of a basis for prediction has occupied many futurists. In many cases, an emperical base is blended with fiction to speculate about developments far into the future. Other futurists are influenced by theology. Certainly, the art of propnecy is ancient as is seen in the Bible and in the writings of Confucious.

Economists have used as a point of reference many theories ranging from the sun spot theory of business cycles to mathematical models that employ such fundamental concepts as the multiplier effect and the acceleration principle. The success of economists has been better with short-run forecasting than with long-run term matters.

Whether long-term or short-run forecasting, the work of the economist has not been adequately utilized in education, in my opinion. Information from local sources, from the U.S. Department of Labor, and to a lesser extent, from state sources, has served as our primary basis of forecasts on emerging occupations and employment opportunities that relate to community college planning. On the intake side, we have followed high school enrollment trends. As you might expect, the forecasting of enrollments has been more reliable than forecasting demand for graduates. Some community colleges are developing information systems that will provide, when perfected, improved short-run projections about prospective students and the supply of and demand for entry level and retrained technical and paraprofessional personnel in their communities.

With or without models, most of us are expected to act like futurists. As college administrators we work in a futuristic environment. We are required to come up with data about expected program outcomes. As students invest their time and money in education, they are betting that our programs will make them better prepared for jobs of the future. The students expect us to give them guidance about the future. Many of the so called "seat-of-the-pants" decisions that we all make are often intelligent assessments of a number of variables that are functionally related, but we have a difficult time justifying our decisions.

In this discussion, my objective is to generate an appreciation of the proposition that we probably know more about the future and the implications for job preparation, career choices, and the world of work that we as educators sometimes are willing to admit. It is my hope that you will be as bold about gazing into the future as I will try to be.

The past and present economic and social events, cause-effect relationships and pure intuitive inclinations will guide my comments. We will turn to history in an effort to look for trends and indications of the magnitude of change that might be reasonable to expect and the character of events that could be ahead of us.

We will speculate about the consequences of some of the current issues and concerns and potentialities in terms of implications for priorities for occupational education and community and junior colleges in the years ahead.

Change in Perspective

During the last couple of centuries, we saw the forces of change produce a range of events affecting mankind and nations in ways that only a few people would have dared imagine. The changes have been breathtaking.

In the last 50 years, we have witnessed the discovery and application of knowledge producing such awesome developments as space travel and nuclear power. The hybridization of plant life and the development of agricultural chemicals have revolutionized food production. Computer technology and communications technology are producing profound impact on our way of life. The polio vaccine and radioisotopes have been of miracle magnitude.

We have seen horse-drawn vehicles become obsolete. The steam locomotive has become a collector's item. Home delivered milk, eggs, and vegetables have disappeared except in rare cases.

The depletion of scarce natural resources has moved to a crisis level causing our economy to go into spasmatic reactions. Petroleum, natural gas, timber lands, iron ore, water resources, coal deposits, agricultural land, and even clean a r are all subjects of great concern. The full impact of the pressure on our natural resources has not yet run its course.

All of these changes have caused old jobs to disappear and new ones to emerge. Profound structural changes have occurred in the labor market.

To appreciate the extent of change that can occur in a century even in education, we should recall that a hundred years ago, we were developing one room schools within walking distance of home. There were only limited opportunities for job training through the educational system. As far as higher education went, we had a few liberal arts colleges, largely church supported, and a few state-centered land grant colleges with an agricultural emphasis. Almost no one completed the eighth grade a century ago, so the demands placed on higher education were relatively minor at that time.

Since then, education has gone through many changes. Although it is difficult to perform something as awesome as a nuclear chain reaction in the methodologies of teaching and learning, educators have made headway in this direction. For instance:

1. Intake diagnosis of student strengths and weaknesses has made open-admissions meaningful. As a result, education has become more personalized.

2. We have developed competency-based instruction, and we use behavioral objectives to guide our teaching.

3. Computer assisted instruction has had success. The use of the computer in career guidance is expanding the effectiveness of guidance counselors.

4. Educational television has made it possible for the home to be a learning center.

5. Cooperative education has expanded the linkage of employers and agencies with educational institutions to give students practical experiences in work settings and in volunteer service and other benefits.

6. Significant progress has been made in devising methods to assess life experiences for college credit.

7. New disciplines have emerged and others have been drastically altered.

Of the changes in higher education in the last century, the changes associated with the evolvement of the easy entry, comprehensive, two-year, associate degree granting community colleges have been the most profound. The junior college gave way to the community college as junior colleges underwent internal redesign. Many junior colleges transformed themselves from liberal arts institutions into administratively flexible institutions. They now offer a comprehensive array of services that stray considerably from the lock-step curricula of traditional educational institutions.

Many of the characteristics of community colleges now taken for granted evolved from day-to-day pressures. The commitment to open admissions has forced community colleges to be innovative in addressing needs of persons with varied prior educational attainment. The strong tie to community interests and heavy dependence in most cases on local financing has required them to be highly responsive to local social,

economic and political institutions. The absence of other institutions has encouraged them to assume leadership roles in strengthening community life.

Could all of this have been predicted a hundred years ago? Although there are specific institutions noted for their innovative ventures, like Joseph A. Schumpeter observed (the economist who spent a lot of time analyzing the process of innovation)--in the wake of the innovator comes a horde of imitators. In the late 60's, like the imitators in quest of profit, there was, in fact, a rush of new community college interest following the years of philosophical formulation.

Simultaneous with the emergence of the community college as an institution, a new version of higher education gained impetus. Occupational education leading to certificates and associate degrees has become increasingly an attractive option in American education from the standpoint of a person in the labor market, employers, and those persons who see the relationship between trained manpower and economic vitality.

Structural changes in the production and distribution of goods and services created the need for paraprofessionals, middle-level managerial personnel and technicians. These categories of workers became the target of occupational education. Community colleges, junior colleges, and technical institutes became the primary delivery vehicle for this popular option in most states. Today, by conservative estimates, occupationally oriented education accounts for 50 to 60 percent of the almost four million persons enrolled in community colleges, junior colleges, and technical institutes. This percentage is increasing annually and may be expected to continue to grow in the next decade.

The growing interest in less than baccalaureate education needs of the economy and individuals and the interest in occupational preparation generated by the career education movement will contribute to this growth of occupational education.

As we look at the developments of the past, we find the insights to guide our speculation about the future. It is apparent that many current trends will continue and it is certain that new far-reaching forces will affect education in the years ahead.

Major Demands

Without doubt, major demands will be placed on community colleges in the decade ahead. The conditions producing these are, to a great extent, already in motion.

On the basis of what we know at this point in time, community colleges must be prepared to address the following four demands:

1. Become more responsive to changing economic, social, and scientific conditions.
2. Develop capacity to serve a limitless market.
3. Measure our impact more effectively.
4. Develop new organizational arrangements for providing community benefit.

On the surface there appears to be nothing in these demands as challenging as: bring peace to the world, or eliminate starvation and disease, or develop the resources of the planets, or find new galaxies in the universe. But these demands will require perceptive analysis of our best information and intuitive insights.

Changing Social, Economic and Scientific Conditions

Contemporary conditions are our best starting point as we speculate about the future. We must observe closely a number of social, economic, and scientific conditions and interpret the consequences for the demands on educational programs that they will represent in the next few years. Among these conditions are those related to changing values and life-styles, industrial development, the role of governments, and labor market trends.

The Dynamics of Values and Lifestyles

A number of social trends are in progress which must be highlighted in an analysis of conditions affecting the future of work and education.

Contemporary developments associated with new life-styles, shifting values related to the rights of all special groups, contamination of the environment and other related developments will produce social realignment. As new regulatory and human service agencies emerge and expand and as social control measures are developed, existing occupational education programs will necessarily require modification to accomodate these developments.

Factors such as changes in the role of the family, growth of urban institutions, and increased mobility of persons will need to be assessed for training and education implications.

A growing consciousness of preventative health care is unfolding with implications for food processing and consumption, the use of pharmaceuticals, and the emphasis on physical fitness. A growth of commercial activity in response to this trend is imminent.

One of the basic factors in futuristic analysis has to be population. Population trends in our communities have profound impact on the character of service needs whether commerce or education. Such dimensions of population trends as changes in the median age, life expectancy, and birth rates are critical statistics that can give us direction. Population density centers are in constant change as people exercise their preferences for occupation, climate, and cultural variation. Service centers and job opportunities expand or contract reflecting these population shifts.

The work-leisure equation will continue to change with more priority being placed on leisure. Work will continue to dominate the work-leisure equation but far reaching impact related to work, consumer habits, and educational needs may be affected due to change in relative shares of time devoted to work-leisure. Consumer choices in the uses of leisure will expand. Retirement options will mix work and leisure in new patterns and in new time frames.

Social priorities and problems are increasingly being addressed by scientific research. Scientific discovery and technological tools are being used to reinforce social values and to improve the quality of life. For instance, there has been an upsurge of the use of drugs, devices, and processes to cope with persistent social problems. Among these priority areas are health care, family planning and crime control. It is not unreasonable to expect this trend to continue. Restructured work opportunities in the development, production and use of outcomes of science and technology to accommodate new values and life styles and to reduce the impact of the breakdown of social institutions are imminent.

Based on prior experience, it is not likely that a surge of new occupations will necessarily take place as a result of these changes in our life styles, values and institutions. Existing occupations will absorb many of the human service and social control functions, but the effects of some of these developments will produce expanded demand for trained personnel. For instance, the bad air associated with pollution of the atmosphere will undoubtedly result in respiratory diseases requiring greater sophistication in the knowledge and hardware related to home and work environments and health care long before we bring into control the sources of bad air. There is a demand for trained personnel inherrent in the bad air condition and the control functions, equipment manufacture and health services delivery that go with the bad air.

Industrial and Commercial Developments

Major shifts in industrial and business activity may be expected to occur due to the decline of productivity, the depletion of key natural resources, and the surge of competition from other countries in previously American dominated industries. These fundamental trends will create both economic dislocations and new opportunities for occupational education.

The search for alternative resources will activate dormant technologies and lead to new technologies, which will place demands on educational programs that develop technical personnel. For instance, technologies based on petroleum derived energy will need to be deemphasized. Although there will be resistance, modern labor-using techniques will return in selected industries, such as construction, not only conserving energy but also reducing the level of hard-core unemployment

which plagues our nation today. Emphasis on labor-using techniques does not mean returning to past methods of production since our knowledge base is much more complex than it was a century ago. Highly trained labor combined with knowledge acquired in recent decades should allow new low energy-using processes to evolve.

Extraordinary ventures of interplanetary and intergalactic dimensions will take place in the years and decades ahead. For instance, space discoveries may be expected to produce extensive explorations leading to resource extraction from other planets, interplanetary industrial development, and new technologies for economic activity in low gravity environments and other non-Earth environments. Already there is speculation about industrial processes performed in low-gravity environments to enable more precise production. Industry will no doubt capitalize on interplaneterized production technologies.

At some point, the quest for energy solutions will result in something as significant as the transmission of concentrated capsules of heat from solar collection centers in outer space to the Earth at speeds faster that light travels. Should such technological advances occur, they are likely to be developed by multi-national corporations because they seem to be the only instrumentalities that have the capacities to pool investment capital, transcend the politics of nations, and have the organizational know-how to achieve such a fete.

Further, deep penetration of the Earth for geological knowledge and expanded utilization of the oceans and the Earth's atmosphere will occupy scientists and will place technological demands on our industrial enterprises, which could activate programmatic changes in our educational

institutions. Obviously, as scientists pursue these interests, new elements are likely to be discovered which will have implications for expanded economic activity.

It is difficult to speculate on the demands that these developments would place on education, but we may be certain that science-based technicians will be a critical component of work teams of the future.

In our transportation and distribution systems, a number of far-reaching developments have occurred in the last twenty-five years. There is no doubt that new forms of interface of the consumer with outlets of services and goods may be expected. Just as self-service retailing, shopping centers, and credit cards have revolutionized consumer activity, there is no reason to believe, in my opinion, that more change will not occur in the way consumer goods and professional services will reach the consumer.

Banking processes are changing drastically. There is considerable speculation that we are close to a non-money economy. The way people carry out business transactions, both large and small, will be altered widely in the next decade.

Because of these many developments in industrial and commercial activity and the rapid rate of change, job requirements will change frequently. We should, therefore, expect to see an increasing demand from business and industry for short-cycle training, tailored to specific conditions.

Revamping of Governmental Agencies and Public Services

Local governments are increasingly diversified as their roles are

extended in regulating our lives, the way business and industry function, and the use of our natural and community resources. As this continues, prolification of new laws and ordinances will occur. New services will be provided by government agencies in response to the breakdown of informal control mechanisms and the decline of institutions like the family.

In the process, new units of government will be created. Just as we have school districts, sewage districts, and fire protection districts--all with their taxing powers and administrative structures--we should expect to see the growth and/or expansion of air pollution control districts, retirement districts, and health service districts with local taxing authority and expanding administrative structures. The mix of governmental agencies may be expected to change as new priorities emerge and old ones decline in importance.

As a result of these developments, a revamped approach to civil service, public employment practices, and the training and retraining of government personnel will be required.

Tax payers will continue to voice demands for efficiency in government. The tax revolt will cause priorities on the use of public funds to shift. Although educational enterprises are among the suspect spenders of public funds, once educators shake out the waste, public confidence will be restored. Community colleges should fare rather well in most cases.

The dependence of local governments upon community colleges for trained personnel and a range of new services will continue to grow.

Labor Market Trends

Educators should be prepared to monitor closely the following labor market trends that will affect the design of occupational education:

1. The need to recycle technical skills on an accelerated basis due to the knowledge explosion and structural changes in the economy;

2. The growth in the labor supply trap that inexperienced or poorly educated and improperly trained young adults face;

3. The synthesis of disciplines as is evidenced by the demands for bio-medical, psycho-engineering, and socio-architectural technologies; and

4. The tendency to vertically stretch out the manpower hierarchy producing discrete gradations of specialization from the technical specialist to the professional generalist.

These trends will require us to place greater emphasis on job or task analysis as a basis for developing modules of instruction in curricula. We must refine these methodologies. The future will not permit us to build or revise curricula on the basis of subjective judgments of the content of a curriculum. For instance, we will need to know not only that mathematics is important, but how much and what kind of mathematics is needed in a given program. This applies to all courses in our curricula. We have committed educational crimes as we arbitrarily structure curricula without paying attention to the trends in jobs for which we prepare persons, but this is catching up with us.

By no means is it suggested that the design of new curricula will necessarily be the educator's response to all of these trends. In fact, it may mean that revisions will be the answer with components added on and new options developed within existing programs. In other cases, the infusion of content or new methods of teaching may be all that would be

necessary. In any case, the forces of change, as summarized above, must be tracked with precision by community colleges.

As important as developing a data base for new curricula, is developing a data base to guide phasing down or phasing out of present educational programs. Most of education has no acceptable mechanism for dismanteling programs that produce low community benefit. We need to be better prepared to reallocate faculty and other resources to new uses.

Education as a system has, in my opinion, lacked adequate signaling mechanisms (management systems, if you wish) to maximize the use of resources without depriving services. The future will require us to correct the wayward character of our management systems in education.

The Limitless Market

It is ironic that at a time when some colleges are losing enrollments, or have enrollment ceilings due to fixed budgets, the market for community college services is far from being fully developed. Unmet education and training needs and the open entry feature of the community college make the perimeters of the community college almost limitless. Once the contemporary tax revolt is sorted out by the public and the shake down of inefficiency in education is completed, occupational education will come out of this strengthened.

In looking ahead, there are a number of factors that suggest a limitless market provided that we are able to develop a capability to meet the market.

One point that can be made with a high degree of confidence is that the community college market will continue to shift to older and older students and away from an identity with a given chronological age as the "college age" or with the "recent high school graduate". As this happens, occupational education will rank high on the list of priorities of this older population. In the process, the colleges will need to develop a system that will permit an appropriate and timely response.

There is great diversity in the needs of the populations to be served. In the decade ahead, top priority must be given to developing a better fix on the training needs of populations constituting the prospective clients. We will have to be more sophisticated about the characteristics of the numerous categories of non-traditional learners, learning disabilities, and gradations of economic deprivation. Sociological considerations whether ethinc, sex, or age derived will continue to require deliberate attention. The days of looking at the interests of 10th, 11th and 12th graders to determine what is expected to enter the community college are disappearing. The structure of educational needs is becoming much more complex and those institutions that cannot respond to these needs will lose students.

There is a huge backlog of near-illiterate adults that constitute a major challenge for us. Our elementary and secondary schools, in spite of billions of dollars of expenditures, generate a high percentage of functionally illiterate persons. Almost one-fourth of the high school students do not complete high school. Many persons who graduate from high school are not prepared to enter adulthood with problem-solving skills, the capacity to cope with our institutionalized reams of printed

material, or the computation skills to make simple business calculations needed to effectively function. Much of what is taught in high school goes on and on without success producing functionally backward adults. I am not optimistic regarding this matter. Pressures for universal literacy standards will lead to a total renovation of elementary and secondary school systems. However, before the situation improves, it will require considerable research into learning technology. In the interim, adults will turn to community colleges for their basic literacy education. In most cases, these literacy skills will be acquired as an integral part of their pursuit of occupational preparation.

Further, a highly sensitive interface with the conglomeration of adults in need of educational services must be forthcoming. The poorly educated adult, the unemployed college graduate, and the technologically displaced professional are key targets. Those persons forced out of productive roles by performance standards, retirement pressures, and legislated requirements associated with social reform, environmental protection and occupational safety are high need persons.

The needs are varied and educational programs must necessarily take new form. Whereas much of education has viewed the persons having unique needs as too difficult to serve, community colleges must continue to treat the needs of the so-called special populations as a priority target, for every person in reality is a unique being worthy of customized education services.

To facilitate the changing demand, the entry-exit-reentry process will need to be studied and improved. Emphasis must be placed on

improving the quality of educational services to the diverse students. A larger percentage of the budget will have to go into supportive services than has been the case. Instruction must become more and more individualized and packaged to fit the needs and availability of students and not the convenience of the faculty or the institution. For instance, only a few colleges can accommodate students with variable entry and exit today.

As a part of the process, college credit for life experience and non-traditional training will be an integral practice of community colleges in the not too distant future, in my opinion. Equivalency measures may be expected to become quite intricate to encompass the galaxy of external learning that goes on in the normal process of work, community service, and life generally.

The demand for community college services will expand as the separation between edcuation and work disappears. Linkages with the place of work must continue to be strengthened. In particular, better communication with personnel managers of corporations, with officials of labor unions, and with other principals in the labor market will become more and more pronounced because of the growing expectation that education should be related to the world of work and that education should lead to a contributing role in the economic arena. This career education focus is more than a momentary fad. It is highly probable that the education-work theme will accelerate in the years ahead.

It is clear that as we develop a limitless market posture, imperfections have to be reduced. As we accomplish this, the transition of persons from education to work will be enhanced, the retraining and

upgrading of the workforce will be refined, and community resources will be more effectively utilized.

Measuring the Impact

In the years ahead, community colleges will be under pressure to measure the impact of their comprehensive, community-based orientation. Services and programs offered by community colleges will be the targets of tax-conscious fiscal vigilanties. In the past decades, especially in the 1950's and 60's, educators had a free hand in the operation of their institutions. Funds flowed like wine at a Parisian festival. Community colleges benefited from this mood.

The future will require much more precision in measuring the need for and impact of comprehensive educational services than has been the case in the past. The public will want to know the benefit being derived. Cost benefit ratios will need to be refined. Chief executive officers must be prepared to justify the budget in terms of increments of outcome derived from increments of expenditure.

Community leaders will require us to be explicit about the impact of what we do on individuals, social problems, community vitality, and on the productivity of local employers and the economy generally. We will need to show the impact of our services on the student in terms of adequacy of preparation for a productive role in the community, ability to retain a job, and ability to advance.

In the past, it has been appropriate to talk of enrollments as the indicator of success in serving community needs. How often have you heard a president boast of an increase in enrollments without much

information on the composition of that increase or the quality of services being provided? Enrollments never have been a good measure of productivity. Contrary to past practices, the future will require all of us to discuss education's productivity intelligently. Information on the characteristics of enrollments is increasingly needed. We need information on the retention of clients, what is happening to the students after they exit regardless of whether they are completers or non-completers, and who returns for additional services. Such information in sufficient detail and properly analyzed is a fundamental tool in the budgetary process, in forward planning, and in justifying requests presented to the trustees.

Although the associate degree is a key descriptor of community and junior colleges, only a few studies deal with the matter of its acceptance by employers as a measure of educational attainment. We need better information on the earning power of associate degree graduates relative to baccalaureate degree graduates in specific occupational categories. Similarly, the impact of certificate programs must be established. Unless such information is developed, the credibility of occupational programs in community colleges will continue to be challenged.

We need longitudal studies on these matters and an annual flow of information allowing us to measure trends. As we look at curriculum needs, the data of longitudinal studies will have a strategic role to play in building the case for starting up new programs, redesigning existing ones, and phasing out the duds. There is no alternative to a good data system whether for internal planning or for poliitical reasons.

Structural Changes are Imminent

How healthy is the total education enterprise? Distressingly for us in education, a growing segment of our society views the educational system as being in serious difficulty, and consider education as one of our national problems no less in need of attention than the energy crisis or the enviromental dilema. Will the delivery of formal educational services remain a virtual monopoly of public and non-profit private educational institutions? Or will education be turned over to proprietary interests guided by economic principles of the market place such as are found in supply-demand analysis, price theory, and input-output theory?

The very structure of education may be expected to change drastically in the next decade. New organizational forms for mobilizing resources and delivering community benefit will most likely emerge in the near future. These developments will come about through the formation of new alliances. Some will be simple in form. Others will be corporate complexes. Already we find consortium arrangements combining the capabilities of governmental agencies, neighboring educational institutions, volunteer organizations, and proprietary interests with those of the community college. Contractual arrangements are being developed with these neighboring entities to address community needs with collective strength. Arrangements with neighboring educational institutions are becoming common practices to serve unserved needs, reduce possibilities of duplication, enhance articulation, and avoid the need for construction of new facilities.

Today, we can find new community college districts that plan to have no faculty and no campuses but are contracting with several existing institutions (public, proprietary, liberal arts, non-profit, vocational) to provide students with a comprehensive array of services. Teachers would be employed only if services were not available from existing institutions. In my opinion, these arrangements will grow. Major problems associated with the management of such education conglomerates, control of curriculum, the rate at which services should be purchased, legal complexities, and the evaluation of outcomes will require new staffing patterns.

Local planning in the future will place more and more emphasis on the utilization of the resources of business and industry and community agencies as cost-saving and quality-improvement measures. Rather than duplicate resources in the community, colleges will expand the practice of leasing production facilities for instructional use during off hours and purchasing the time of technically competent supervisory personnel for services rendered in teaching students refined competencies at the work site. These contractural arrangements will become an integral part of the plans of community college districts. Community agencies will increasingly serve as learning stations through which students provide services while receiving training. Each college will need to design a mechanism to synchronize the use of existing college resources with the resources of the work site, to provide data needed to determine reasonable rates of compensation for these services, and to work out the intricacies of administrative control. Principals of these arrangements

will be manufacturing firms, financial institutions, labor unions, private social service agencies, and governmental agencies, among others. The experiences we have gained under apprenticeship training and traditional cooperative education arrangements will be helpful in these expanded ventures.

Our great opportunity is to make work and community service inseparable from education. In the process, a new liberal arts will emerge, much less esoteric than the classical liberal arts, but more closely related to practical problem solving for personal benefit, job needs, and community vitality. Increasingly, education will be structured into the total life cycle with educational services for older people, regardless of age, being as pertinent as for younger people, losing the reputation of being a stopping off place for people who cannot be absorbed by society.

In another direction, more and more community colleges will be engaged in providing specialized training to corporations, trade associations, and government agencies under performance contracts. Cost schedules will need to be developed to enable the institution to recover its direct and indirect costs.

Unavoidably, proprietary interests and/or their concepts will enter the picture increasingly in the decades ahead.

May I suggest that the community college is not likely to be a static concept retaining its present dimensions very long. Because of its success in assembling resources and in responding to community needs, community leaders will turn to it frequently. As a result, community college dimensions will be broadened to the extent that the community

college will become comingled with the total community structure. In this capacity, occupational education will continue to be a cornerstone function, but community planning and development, industrial revitalization, and human and social services, among other professional and technical functions will grow out of occupational education and will be synthesized into the mission of the community college.

These new extensions of the community college will be persistent particularly in suburban and rural communities where the functions are poorly performed or unperformed. The trend will be most pronounced in those cases where the community college is locally financed, locally controlled, responsive to community problems, and the training and education programs are service-centered.

Great Prospects Ahead

One point I hope stays with you and that is: Community colleges are at a point in history when they must be adept in coping with change. In the next decade, we will see extraordinary developments.

In this change will be great opportunities. The dynamics of economic, social, and scientific conditions will give us unprecedented challenges. The new markets will test our commitment. The demand to be output conscious will cause us to become better managers. The trend toward new organizational arrangements will improve our delivery capabilities. All of this should result in a renewed optimism among community college planners.

Community colleges that will be unwilling, unprepared, or incapable to respond to the demands will lose their favored positions in their communities.

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